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ABSTRACT

The long-term effects of state compensatory education (SCE) and Chapter 1 programs on the development of basic skills and academic achievement of Sacramento (California) were studied for a sample of over 6,000 SCE and Chapter 1 students in grades 2 through 5. Follow-up and retroactive approaches were used to ascertain the degree to which thinking skills of these students appear to have improved and to determine what kinds of students have exited from these programs in the 4 years. Major findings were: (1) mean scores on the Comprehensive Test of Basic Skills increased gradually; (2) a majority of these students stayed in the program all 4 years, with about 10 percent exiting consistently; (3) White students were the most successful and Hispanic American students were the least successful in exiting programs; and (4) the earlier students were identified and received program services, the more positive were the long-term achievement results. Recommendations are included for further study of successful programs and for action to improve the academic achievement of Blacks and Hispanic Americans. There are 15 tables of study data and 4 illustrative figures. Two appendices contain charts of grade skippers and repeaters and score conversions to normal curve equivalents. (SLD)

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February 11, 1992

Research and Evaluation Office

Series: 1991-92

Evaluation Report:

**SACRAMENTO CITY UNIFIED SCHOOL DISTRICT
COMPENSATORY EDUCATION AND CHAPTER 1
SUSTAINED EFFECTS STUDY, 1987-1991**

No. 24 (Abstract)

BACKGROUND AND METHODOLOGY

ED 347 232 This study met the "Sustained Effects Study" requirements of PL 100-297 [Section 1021 (a) (2)], April 28, 1988. The study investigated the long term effects of SCE/Ch1 programs on the development of basic thinking skills and academic achievement over the four year period of 1987-91.

Test and background data were collected on over 6000 SCE/Ch1 students. Data included reading and mathematics test scores on CTBS, ethnicity, gender, grade level, schools attended, attendance, and transiency. Student data were categorized and analyzed according to test scores in three groups: Long-term SCE/Ch1 graduates (LG), students who exited from the program the first year and stayed out; Marginal SCE/Ch1 students, students who exited and re-entered the program at least once; and Long-term SCE/Ch1 students (LS), students who did not exit from the program at anytime. The study used both follow-up and retroactive approaches to address two research questions: (1) "To what degree have thinking skills of SCE/Ch1 students been improved/sustained over the four school years, 1987-88 through 1990-91?" and (2) "What kind of students have exited from and stayed out of the programs (Long term SCE/Ch1 graduates), and what kind of students have never performed well enough to exit the programs (Long term SCE/Ch1 students)?"

MAJOR FINDINGS AND RECOMMENDATIONS

The mean CTBS test scores of SCE/Ch1 students in this study increased gradually. During the four year period in 1987-91, the long-term SCE/Ch1 graduate students (LG) improved their mean scores each year in both reading and mathematics, and the long-term SCE/Ch1 students' (LS) mean scores remained flat in both reading and mathematics.

UD 028 738 A majority of SCE/Ch1 students have stayed in the program for the four years in 1987-88 through 1990-91 and about 10% have consistently exited from the program.

White students were the most successful in exiting programs and Hispanic students the least. White students were the only ethnic group that had a percentage decrease in LS and a percentage increase in LG in both reading and mathematics. Hispanic students were the only ethnic group that had a percentage increase in LS and a percentage decrease in LG in both these subjects. The relatively high success rate of Asian students and the relatively low success rate of Black students in mathematics were consistent with other SCUSD research findings.

The earlier students were identified and received program services, the more positive the long term achievement results. The largest gains in reading and mathematic mean scores were made between the first and second year of SCE/Ch1 programs.

Low attendance and high transiency rates appeared to be indigenous to SCE/Ch1 schools and the SCE/Ch1 programs were basically genderless.

The most important recommendations are:

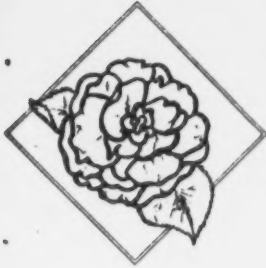
1. Identify differences in SCE/Ch1 program specifics between the successful and not successful schools in terms of long-term graduates from the SCE/Ch1 program and, from this data, develop plans to improve SCE/Ch1 programs.
2. Determine what the impediments are to the progress of the hard core long-term SCE/Ch1 students, particularly the Asians and Hispanics, and provide resources and actions to ameliorate these.
3. Develop and implement a plan of action to improve Black students' achievement in mathematics and Hispanic students' achievement in both reading and mathematics at SCE/Ch1 schools..

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Sacramento City Unified School District

February 11, 1992

Administrative and Evaluation Services Office
Series: 1991-92
Evaluation Report:

No. 24

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT COMPENSATORY EDUCATION AND CHAPTER 1 SUSTAINED EFFECTS STUDY, 1987 THROUGH 1991

BACKGROUND

State Compensatory Education (SCE) and Chapter 1 (Ch1) programs are targeted for educationally disadvantaged students. The goal of SCE/Ch1 programs is "to expand the education achievement of these students". The SCE program is funded by the state and Ch1 by the federal government. Students in the Sacramento City Unified School District (SCUSD) are identified as requiring these services if they score below the 40th percentile (%ile) on the Comprehensive Test of Basic Skills (CTBS) in Total Reading and/or Total Mathematics and attend an eligible school. Eligible schools are schools located in attendance areas having the highest concentration of low income families.

Federal regulations (**FEDERAL REGISTER**, October 12, 1979) require the evaluation of Ch1 programs at least once during a three year period to determine whether the achievement gains measured over shorter periods of time, nine to twelve months, are sustained over longer periods of time. This evaluation must be based on an objective measure of student achievement and be kept on file at the district office and school sites for a period of five years.

This report presents the SCUSD's fourth "sustained effects study".

This study investigated the long term effects (the four year period of 1987-91) of SCE/Ch1 programs of the SCUSD on students' thinking skills. The report specifically meets the "Sustained Effects Study" requirements of **PL 100-297 [Section 1021 (a) (2)]**, April 28, 1988. It also illustrates a new evaluation strategy which uses both follow-up and retroactive approaches.

EVALUATION QUESTIONS

Research has shown that SCE/Ch1 programs can help students develop basic thinking skills that are manifested in academic achievement. This study was designed to investigate the long term effects of SCE/Ch1 programs on the development of these skills. The study addressed two research questions.

Research Question 1: To what degree have thinking skills of SCE/Ch1 students been improved/sustained over the four school years, 1987-88 through 1990-91?

Research Question 2: What kind of students have exited from and stayed out of the programs (Long term SCE/Ch1 graduates), and what kind of students have never performed well enough to exit the programs (Long term SCE/Ch1 students)?

METHODOLOGY

A. Data Collection

Test and background data were collected.

1. **Test Data:** Test scores were collected on over 6000 SCE/Ch1 students that were in SCE/Ch1 programs and were enrolled in grades 2-5 in the 1987-88 school year (also known as the base year). These students scored < 40%ile in Total Reading and/or Total Mathematics on the CTBS.

It should be noted that these were not necessarily discrete groups. It was not determined how many students were in both the reading and mathematics program categories.

2. **Background and Educational Data:** Factors to be included in the study were identified.
 - a. Ethnicity
 - b. Gender
 - c. Grade Level
 - d. English Proficiency
 - * Fluent English Proficiency/English Only (FEP/EO)
 - * Limited English Proficiency (LEP)
 - e. School(s) of Attendance
 - * SCE/Ch1 Schools
 - * Computer Laboratory
 - * Attendance Rate
 - * Transiency Rate
 - f. 1986-87 Student Eligibility for SCE/Ch1

B. Procedures

The study was conducted in two parts.

1. **Follow-up Study:** Students were categorized into four groups based on their four year test scores. Only the first three groups were included in this study's analyses.
 - a. **Long-term SCE/Ch1 graduates (LG):** Students who had test scores for the four years of the study, who exited from the program during the 1988-89 school, and who stayed out of the program through the 1990-91 school year.

- b. Marginal students (MS): Students who had test scores for the four years of the study, who exited from the program at least once and re-entered during the four year period. Also included were those students who had test scores for the four years of the study and who first exited from the program in the last year of the study, 1990-91.
- c. Long-term SCE/Ch1 students (LS): Students who had test scores for the four years of the study and did not exit from the program at anytime during the four year study period.
- d. No score students (NS): Any student in the base year (1987-88) sample who met at least one of the following criteria at anytime during the four years was dropped from the study.
 - * Skipped or repeated a grade
 - * Left a SCE/Ch1 school
 - * Left the district
 - * Did not have the four years Reading Comprehension test scores (from Reading only)
 - * Did not have the four year Mathematics Concepts/Application test scores (from Mathematics only)

The data for the number of students skipping or repeating a grade are displayed **APPENDIX A**.

- 2. Retroactive Study: Background and educational data were examined and compared for students in the two groups identified as LG and LS.

C. Data Management and Analysis

- 1. Individual students' test scores were extracted from the test file in the Spring semester of 1991 and managed by Dbase software. Statistical Package for Social Science (SPSS) was used to compute and analyze the data.
- 2. The CTBS sub-tests scores of Reading Comprehension and Mathematics Concepts/Application were used for the study even though Total Reading and Total Mathematics scores were used to identify students eligible for SCE/Ch1 program services. The scores of sub-tests were selected because the research questions were directed at academic "thinking skills".
- 3. Normal Curve Equivalent (NCE) scores provided by tables in the CTBS manuals were used in analyzing and reporting data. See **APPENDIX B** for the conversion of %ile to/from NCE. (For abbreviated reference, 40%ile equals 44.7 NCE and 50%ile equals 50 NCE.)
- 4. The sustaining effects of SCE/Ch1 programs were analyzed by examining two types of statistics.
 - a. The distribution of SCE/Ch1 students among LG, MS, and LS groups.
 - b. The change in mean NCE scores of CTBS sub-tests during the four year period, 1987-91, of students who were in the SCE/Ch1 program at the beginning of this study in the 1987-88 school year.

5. The mean NCE scores of CTBS sub-tests, by background or educational factor, for the LG and LS groups were analyzed for the base (1987-88) and the last (1990-91) school years of the study.

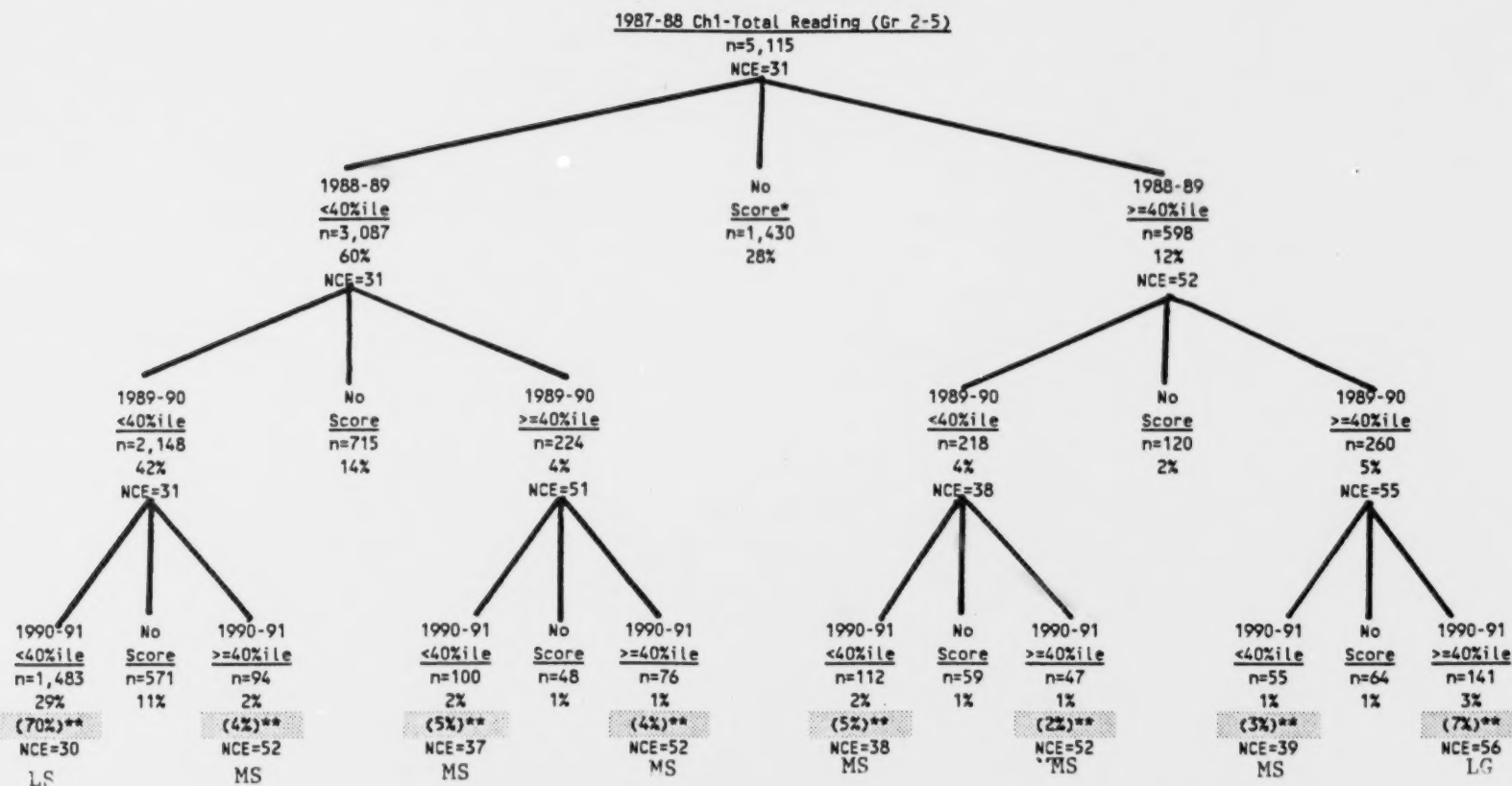
FINDINGS

The findings of this study are reported in two parts: 1. The Follow-up Study and 2. The Retroactive Study.

1. Follow-up Study (See **FIGURES 1** and **2**, pages 5 and 6.)

- a. A majority of SCE/Ch 1 students have stayed in the program for the four years in 1987-88 through 1990-91 and about 10% have consistently exited from the program.
 - * In the 32 SCE/Ch1 elementary schools (Schools are listed in **TABLES 8** and **16**.) where CTBS scores were examined for the 1987-88 school year, 5115 students were enrolled in SCE/Ch1 reading programs and 4169 students were enrolled in SCE/CH1 mathematics programs.
 - * At the end of three years of the study, in 1990-91, 2108 (41%) had Reading Comprehension scores and 1522 (37%) had Mathematics Concepts/Application scores for four consecutive years.
 - * Fifty-nine percent (59%) of the 5115 students in the 1987-88 SCE/Chapter 1 reading and 63% of the 4169 students in the 1987-88 SCE/Chapter 1 mathematics program were considered to be with no score (NS) and not included in the analysis at some time during the study.
 - * Of the 2108 students who had reading scores for the four years of the study, 141 (7%) were long-term graduate SCE/Chapter 1 (LG), 484 (23%) were marginal students (MS), and 1483 (70%) were long-term SCE/Chapter 1 (LS).
 - * Of the 1522 students who had mathematics scores for the four years of the study, 166 (11%) were LG, 515 (34%) were MS, and 841 (55%) were LS.
- b. The mean scores of the long-term SCE/Ch 1 graduates (LG) and marginal students (MS) improved and the scores of the long-term SCE/Ch 1 students (LS) remained at the same level.
 - * The mean NCE scores for reading and mathematics were almost the same (31 and 30, respectively) for the base year in 1987-88.
 - * The LG improved their mean NCE scores each year in both reading (52, 55, 56) and mathematics (52, 54, 56.)

FIGURE 1
READING COMPREHENSION MEAN NCE SCORES
4 YEAR FOLLOW-UP



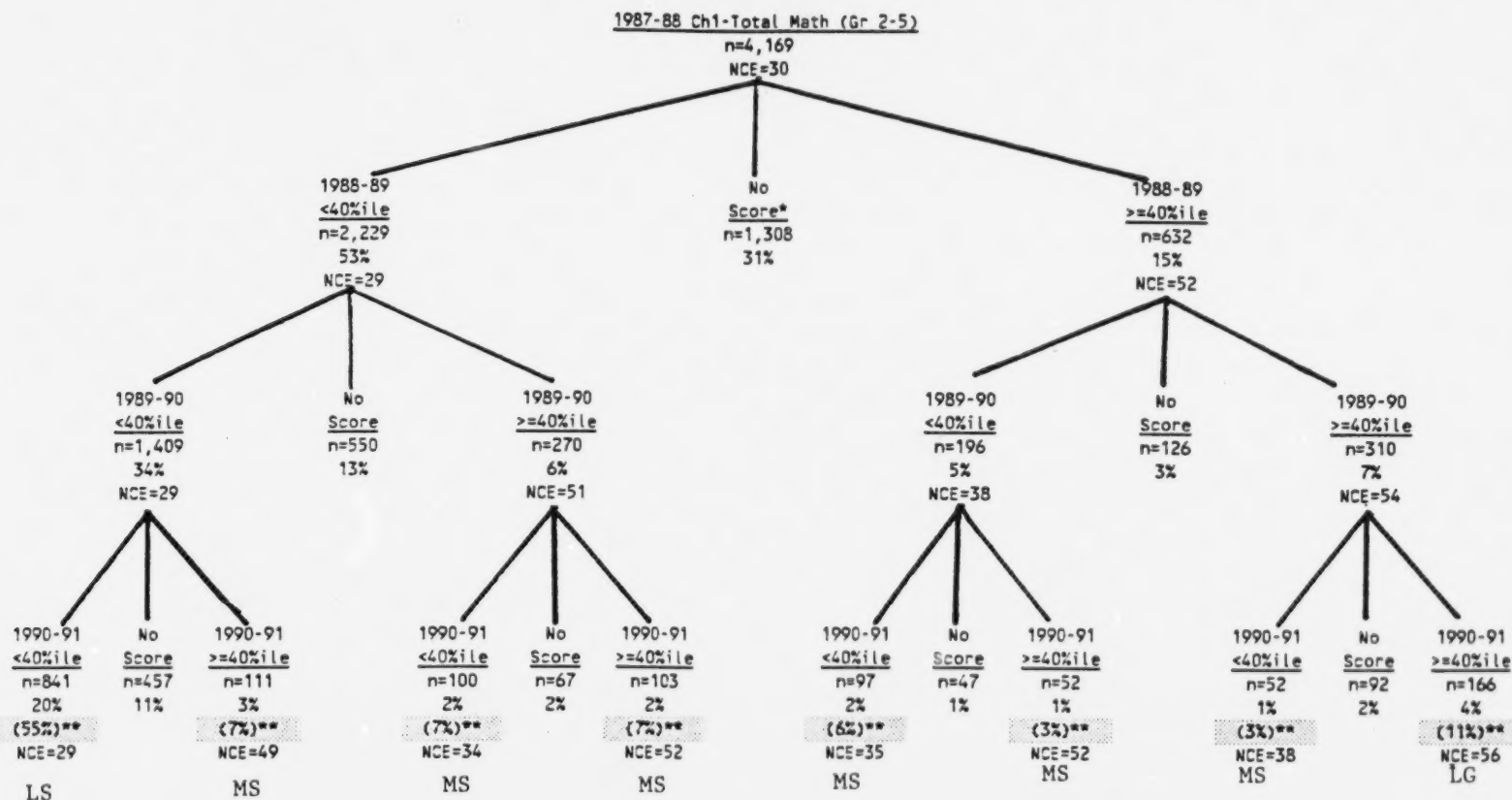
Percentages based on 1987-88 N of 5,115.

*No score category includes students who did not have Reading Comprehension Scores, and/or students who skipped or repeated a grade, and/or students who left a Ch1\SCE School or the district.

**Percentage based on total number of students who were at a Ch1\SCE School, showed normal grade progress, and had Reading Comprehension Scores for 4 consecutive years, 1987-88 thru 1990-91, N=2,108. (Excluded were students who did not attend a Ch1\SCE School and/or students who skipped or repeated a grade and/or students who did not have 4 consecutive years of Reading Comprehension Scores).

EXCEL\CH1RD3.XLS\1291

FIGURE 2
MATH CONCEPTS/APPLICATIONS MEAN NCE SCORES
4 YEAR FOLLOW-UP



Percentages based on 1987-88 N of 4,169.

*No score category includes students who did not have Math Concepts\ Applications Scores, and/or students who skipped or repeated a grade, and/or students who left a Ch1\SCE School or the district.

**Percentage based on total number of students who were at a Ch1\SCE School, showed normal grade progress, and had Math Concepts\Applications Scores for 4 consecutive years, 1987-88 thru 1990-91, N=1,522. (Excluded were students who did not attend a Ch1\SCE School and/or students who skipped or repeated a grade and/or students who did not have 4 consecutive years of Math Concepts\Applications Scores).

- * The LS mean NCE scores remained flat in both reading (31, 31, 30) and mathematics (29, 29, 29). It should be noted that a "flat achievement pattern" using NCE scores is a normal year-to-year growth pattern.
 - * The six groups of MS improved their mean NCE scores in reading (37, 38, 39, 52, 52, 52) and in mathematics (34, 35, 38, 49, 52, 52) by the last year of the study. The mean NCE scores of MS reentering the programs were at least six points higher in reading and four points higher in mathematics than their respective base year mean NCE scores.
- c. The mean NCE scores of each year's total group increased gradually during the four years of the study in both reading (31, 34, 35, 35) and mathematics (30, 34, 36, 36). See **TABLES 1 and 2**, page 8, and **FIGURES 3 and 4**, page 9.

2. Retroactive Study

An investigation of the background and educational data was conducted for the long-term SCE/Ch 1 graduates (LG) and long-term SCE/Ch 1 students (LS).

The findings, categorized by reading and mathematics were analyzed for multiple sub-groups. Data for the American Indian ethnic group were included in the **TABLES** and **FIGURES** for reference purposes, but because of the small number in the American Indian sample the data were not included in any of the ethnicity related analyses.

a. Reading (See **TABLE 3**, page 11.)

(1) Ethnicity

The minority students represented 78% of the SCE/Ch 1 population while their enrollment in the district was about 60%.

- * Black students made up the largest part (30%) of the SCE/Ch1 base year group. The other ethnic groups in order of size were Hispanic (24%), Asian (22%), and White (22%). (See **TABLE 5**, page 13.)
- * Asian students had the highest mean NCE score (32) of the base year groups. The other ethnic groups' mean NCE scores were White (31) and Black and Hispanic (30 each).
- * **Asian students made up the largest part (28%) of the long-term SCE/Ch 1 students (LS).** The other ethnic groups in order of size were Black and Hispanic (27% each) and White (17%).

The LS mean NCE scores were Asian (33), Hispanic and White (30 each), and Black (28).

TABLE 1

Long-term Follow-up of Ch1/SCE Students
Mean Reading Comprehension NCE Scores
1987-88 thru 1990-91

1987-88			1988-89				1989-90				1990-91			
Grade	N	Mean NCE	Grade	N	Mean NCE	Gain	Grade	N	Mean NCE	Gain	Grade	N	Mean NCE	Gain
2	1436	29	3	1010	33	4	4	794	36	3	5	652	36	0
3	1332	31	4	965	36	4	5	750	36	0	6	620	36	0
4	1177	31	5	839	33	2	6	665	34	1	7	431	34	0
5	1170	32	6	871	35	3	7	641	34	-1	8	405	36	2
Total	5115	31		3685	34			2850	35			2108	35	

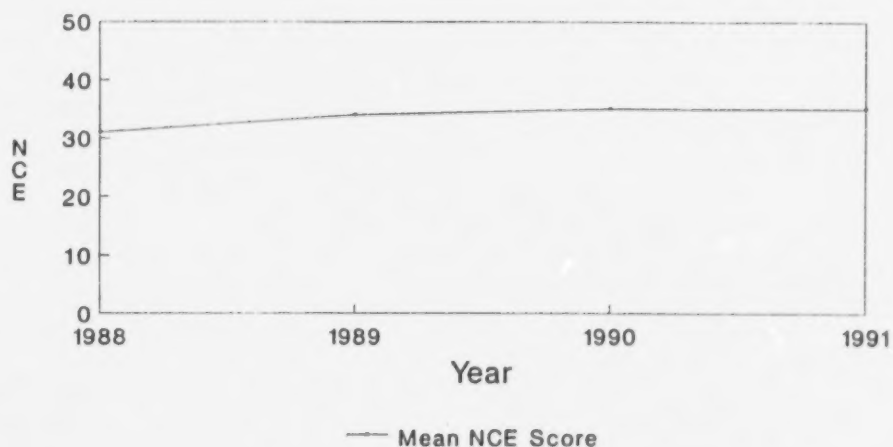
TABLE 2

Mean Math Concepts/Applications NCE Scores
1987-88 thru 1990-91

1987-88			1988-89				1989-90				1990-91			
Grade	N	Mean NCE	Grade	N	Mean NCE	Gain	Grade	N	Mean NCE	Gain	Grade	N	Mean NCE	Gain
2	941	29	3	621	34	5	4	481	35	1	5	379	37	2
3	1089	31	4	728	34	3	5	582	37	3	6	472	36	-1
4	1101	30	5	768	34	4	6	601	34	0	7	363	37	3
5	1038	32	6	744	35	3	7	521	37	2	8	308	36	-1
Total	4169	30		2861	34			2185	36			1522	36	

FIGURE 3

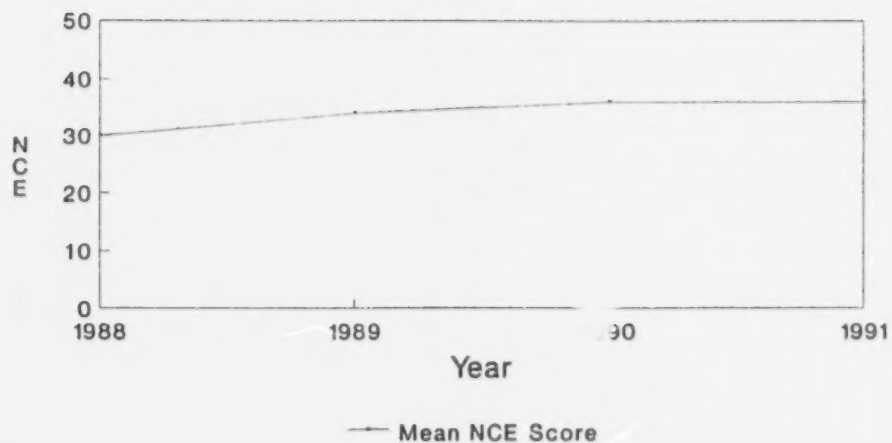
Long-term Reading Comprehension Mean NCE Scores



HQ\LTREAD.CHT\192

FIGURE 4

Long-term Math Concepts/Applications Mean NCE Scores



HQ\LT MATH.CHT\192

- * **Asian and White students made up the largest parts (31% each) of the long-term SCE/Ch 1 graduates (LG).** Other ethnic groups in order of size were Black (20%), and Hispanic (14%).

The LG mean NCE scores were Asian (57), White (57), Black (56), and Hispanic (53).

- * **The Asian students had the largest part (37%) of their own ethnic group in the LS** followed by Hispanic (33%), Black (26%), and White (22%).

The Asian and White students had the largest parts (4% each) of their ethnic groups in the LG followed by Black and Hispanic (2% each).

- * **White students comprised the only ethnic group to decrease LS and increase LG, while Hispanic students made up the only ethnic group to increase LS and decrease LG.** The changes of percent, by ethnicity of SCE/Ch1 students, between the base year of SCE/Ch 1 population and the last year of the study for long-term SCE/Ch 1 students (LS) and long-term SCE/Ch 1 graduates (LG), respectively, were Asian (+6% and +9%), Black (-3% and -10%), White (-5% and +9%), and Hispanic (+3% and -10%). (See TABLE 5 page 13.)

(2) Gender (See TABLE 4 page 11.)

- * Females made up 47% of the base year SCE/Ch 1 population and males 53%. Their respective mean NCE scores were 32 and 30.
- * Females made up 48% of the long-term SCE/Ch 1 students (LS) and 47% of the long-term SCE graduates (LG). Males made up 52% and 53%, respectively. Their respective LS and LG mean NCE scores were 32 and 55 for the females and 29 and 57 for the males.
- * Of their own gender group, females were 30% LS and 3% LG; males were 29% LS and 3% LG.

(3) Grade (See TABLE 6, page 14.)

For the purpose of identification, four groups were assigned for individual grades:

Group A = Grades 2 (1987-88) through 5 (1990-91)
 Group B = Grades 3 (1987-88) through 6 (1990-91)
 Group C = Grades 4 (1987-88) through 7 (1990-91)
 Group D = Grades 5 (1987-88) through 8 (1990-91)

- * **Grade 2 students - 1987-88 (Group A) made up the largest part (28%) of the base year sample** followed by grade 3 students - 1987-88 (Group B) (26%), grade 4 students - 1987-88 (Group C) and grade 5 students - 1987-88 (Group D) (23% each). Group D had the highest mean NCE score (32) followed by B and C (31 each) and A (29).

TABLE 3

Reading Comprehension Mean NCE Scores by Ethnicity

Ethnicity	1987-88			1988-89 thru 1990-91					
	<40%ile			<40%ile			>=40%ile		
	N=5,115		Mean NCE	N=1,483		Mean NCE	N=141		Mean NCE
	N	%		N	%		N	%	
Am. Indian	85	2%	28	20	1%	32	2	1%	68
Asian	1102	22%	32	408	28%	33	43	31%	57
Black	1538	30%	30	397	27%	28	28	20%	56
Hispanic	1226	24%	30	403	27%	30	20	14%	53
White	1145	22%	31	251	17%	30	44	31%	57
No Ethnicity Code	19	0%		4	0%		4	3%	
Total		100%			100%			100%	

Percentage of SCE/Ch1 Population Within Individual Ethnicity

Ethnicity	1988-89 thru 1990-91			
	<40%ile LS	Other	>=40%ile LG	Total With 4-Yr-Scores*
Am. Indian	24%	74%	2%	100%
Asian	37%	59%	4%	100%
Black	26%	72%	2%	100%
Hispanic	33%	65%	2%	100%
White	22%	74%	4%	100%
No Ethnicity Code	21%	58%	21%	100%

*2108 students with 4 year of scores

TABLE 4

Reading Comprehension Mean NCE Scores by Gender

Gender	1987-88		1988-89 thru 1990-91				
	<40%ile		<40%ile		>=40%ile		
	N=5,115		N=1,483		Mean NCE	N=141	
	N	%	N	%		N	%
Female	2426	47%	717	48%	32	66	47%
Male	2686	53%	766	52%	29	75	53%
Total		100%		100%			100%

Percentage of SCE/Ch1 Population by Gender

Gender	1988-89 thru 1990-91			
	<40%ile LS	Other	>=40%ile LG	Total With 4-Yr-Scores*
Female	30%	67%	3%	100%
Male	29%	68%	3%	100%
No Sex Code				

*2108 students with 4 year of scores

- * Among the long-term SCE/Ch 1 students, grade 2 (Group A) made up the largest part (30%) of the LS followed by B (27%), C (23%), and D (19%). Of the Long-term SCE/Ch 1 students, Groups A and C had the highest mean NCE scores (31 each) followed by D (30) and B (29). (See TABLE 6 on page 14.)
- * Grade 3 (Group B) made up the largest part (36%) of the long-term SCE/Ch 1 graduates (LG) followed by Grade 2 (Group A) (28%), D (26%), and C (16%). Group D had the highest mean NCE score (59) followed by B (57), C (55), and A (54).
- * Grade 2 (Group A) had the greatest four year gain (7 points) in mean NCE score (29 to 36) followed by grade 3 (Group B) (5; 31 to 36), D (4; 32 to 36), and C (3; 31 to 34). (See TABLE 1 on page 8.)
- * The largest mean NCE score growth (4 points) occurred between the base and second years. (See TABLE 1 on page 8.)
- * The mean NCE scores between grades 6 and 7 were the only scores that stayed the same or declined (34-34 and 35-34). (See TABLE 1 on page 8). The mean gain NCE scores for other grades were in general, above zero NCE points.

(4) Language Proficiency (See TABLE 7, page 14.)

Due to the incomplete proficiency code for some students, no analysis of these data was made in this study. The statistics shown in TABLE 7 were used only for demonstration purpose.

(5) Schools (See TABLE 8, page 16)

- * The findings reported in this sub-category were limited to students in Group A (Grades 2-5) and Group B (Grades 3-6) who were in the same school the entire four years of the study. The analysis was made only for the schools which had more than 10 students in the sample.
- * It was impossible to find a consistent relationship between computer laboratories and students exiting or staying in SCE/Ch 1 programs. Fifteen SCE/Ch1 schools had computer laboratories operating in 1988-89.

TABLE 5

RACIAL ETHNIC COMPOSITION
 Percents of SCE/CH 1 Students and Total District Population

	1987-88			1990-91				% Change			
	District Enrollment %	SCE/Chapter 1 Total		SCE/Chapter 1 *LS		SCE/Chapter 1 **LG		Reading		Math	
		% Reading	% Math	% Reading	% Math	% Reading	% Math	LS	LG	LS	LG
		A	B	C	D	E	F	C-A	E-A	D-B	F-B
Indian	1.1	2	2	1	2	1	1	-1	-1	0	-1
Asian (Pacific Is.)	19.4	22	11	28	7	31	33	+6	+9	-3	+22
Black	22.5	30	35	27	41	20	16	-3	-10	+6	-19
White	39.6	22	26	17	22	31	29	-5	+9	-4	+3
Hispanic	17.5	24	26	27	28	14	18	+3	-10	+2	-8
Total	100%	100%	100%	100%	100%	100%***	100%***				

*LS means long-term SCE/Ch 1 students, excluding % of no ethnic code.

**LG means long-term graduates, excluding % of no ethnic code.

***3% with no ethnic code

TABLE 6

Reading Comprehension Mean NCE Scores by Grade

1987-88				1988-89 thru 1990-91					
<40%ile				<40%ile			>=40%ile		
1987-88				1990-91			LS		
Grade	N=5,115		Mean NCE	Grade	N=1,483		Mean NCE	N=141	
	N	%			N	%		N	%
Group A Gr 2	1436	28%	29	Gr 5	448	30%	31	39	28%
Group B Gr 3	1332	26%	31	Gr 6	407	27%	29	50	36%
Group C Gr 4	1177	23%	31	Gr 7	345	23%	31	16	11%
Group D Gr 5	1170	23%	32	Gr 8	283	19%	30	36	26%
Total		100%				100%			100%

Percentage of SCE/Ch1 Within Grade

1988-89 thru 1990-91				
1990-91	<40%ile	Other	>=40%ile	Total
Grade				with
				4-Yr-Scores*
Gr 5	31%	66%	3%	100%
Gr 6	31%	65%	4%	100%
Gr 7	29%	70%	1%	100%
Gr 8	24%	73%	3%	100%

*2108 with 4 year scores

TABLE 7

Reading Comprehension Mean NCE Scores by Language Proficiency

1987-88				1988-89 thru 1990-91					
<40%ile				<40%ile			>=40%ile		
				LS			LG		
Language Proficiency	N=5,115		Mean NCE	N=1,483		Mean NCE	N=141		Mean NCE
	N	%		N	%		N	%	
FEPIEO*	4043	79%	31	1082	73%	30	106	75%	56
LEP**	955	19%	30	367	25%	32	32	23%	57
No Lang. Code		2%			2%		3	2%	
Total	117	100%		34	100%			100%	

*Language code = 1, 7, or 9.

**Language code = 2 or 3.

Percentage of SCE/Ch1 by Language Proficiency

1988-89 thru 1990-91				
Language Proficiency	<40%ile	Other	>=40%ile	Total
	LS		LG	With
				4-Yr-Scores
FEPIEO*	27%	70%	3%	100%
LEP**	38%	59%	3%	100%
No Lang. Code	29%	68%	3%	100%

*Language code = 1, 7, or 9.

**Language code = 2 or 3.

- * Of the three schools (David Lubin, John Bidwell and John Sloat) which had the most success (defined as <50% LS, and >8% LG) exiting SCE/Ch1 students, none had a computer laboratory. Of the schools (Edward Kemble, and H. W. Harkness, Susan B. Anthony, and William Land) with little success (>80% LS and <8% LG) exiting SCE/Ch1 students, two did and two did not have a computer laboratory.

- * **Two of the three most successful schools in exiting students from SCE/Ch1 reading programs had higher attendance and all the three schools had lower transiency rates than the SCUSD respective rates.**

- * Three of the schools with the least success in exiting students from SCE/Ch1 reading programs had lower attendance and higher transiency rates than the SCUSD respective rates. One school (Susan B. Anthony) had low transiency, but had an extremely high percent of LEP students (more than 50%). Student language skills in English seemed to be a significant factor in causing students to remain in the program.

(6) Previous Achievement (1986-87 SCE/Ch 1 Eligibility) (See TABLE 9, page 16.)

- * 1314 (89%) of the 1483 long-term SCE/Ch 1 students (LS) were enrolled in SCUSD during the 1986-87 school year, and 126 (89%) of the 141 LG were enrolled in SCUSD during the 1986-87 school year.

The frequency distribution listed on TABLE 9 indicated that there was a relationship between students' previous achievement and thier chances for success in the SCE/Ch 1 programs. Of the students who were eligible for SCE/Ch 1 during the 1986-87 school year, 95% were long-term SCE/Ch 1. Only 5% became long-term SCE/Ch 1 graduates (LG). Of those who were not eligible for SCE/Ch 1, 76% became LS and 24% became LG.

b. Mathematics

(1) Ethnicity (See TABLE 10, page 18)

- * **Black students made up the largest part (35%) of the base year group.** In 1987-88 the other ethnic groups in order of size were Hispanic and White (26% each) and Asian (11%). (See TABLE 5 on page 13.)

- * **White students had the highest mean NCE score (33) of the base year groups.** The other ethnic groups' mean NCE scores were Asian and Hispanic (30 each) and Black (29). (See TABLE 10, page 18)

TABLE 8

Long-term Follow-up of Reading SCE/Ch1 Students by School
1987-88 Grades 2 & 3

School	N				Computer	Attendance	Transiency
	1987-88	1988-89 thru 1990-91					
	<40%ile	<40%ile	In & Out	>=40%ile	Lab	Rate	Rate
Bowling Green	31	24 (77%)	6 (19%)	1 (4%)	N	90.0	85.7
Bret Harte	23	16 (70%)	5 (22%)	2 (8%)	N	91.5	108.5
Caleb Greenwood	22	12 (55%)	6 (27%)	4 (18%)	N	93.4	49.7
Clayton B. Wire	32	22 (68%)	6 (19%)	4 (13%)	Y	91.4	84.6
David Lubin ++	16	7 (43%)	7 (43%)	2 (11%)	N	91.1	64.2
Earl Warren	38	28 (73%)	9 (24%)	1 (3%)	Y	91.0	109.9
Edward Kemble -	36	30 (83%)	5 (14%)	1 (3%)	N	90.4	104.2
Susan B. Anthony -	13	12 (92%)	1 (8%)	0	Y	94.3	62.6
Elder Creek	43	30 (70%)	12 (28%)	1 (2%)	N	95.2	81.0
Ethel Baker	21	15 (71%)	5 (18%)	1 (5%)	Y	89.9	110.6
Ethel Phillips	41	23 (56%)	16 (39%)	2 (5%)	Y	88.8	83.1
Freeport	25	16 (64%)	6 (24%)	3 (12%)	Y	91.6	98.9
Fruit Ridge	26	19 (73%)	7 (27%)	0	Y	92.4	89.4
H. W. Harkness ++	28	23 (82%)	5 (18%)	0	N	91.5	82.0
Hollywood Park	22	12 (55%)	8 (35%)	2 (9%)	N	93.2	53.6
Jedediah Smith	38	16 (42%)	20 (53%)	2 (5%)	Y	94.2	59.6
John Bidwell ++	13	6 (47%)	5 (38%)	2 (15%)	N	93.0	41.1
John D. Sloat ++	19	8 (42%)	8 (42%)	3 (16%)	N	94.4	48.1
Joseph Bornheim	41	28 (68%)	9 (22%)	4 (10%)	Y	90.2	50.9
Maple	15	11 (73%)	3 (20%)	1 (7%)	Y	92.4	113.2
Mark Hopkins	15	10 (67%)	5 (33%)	0	N	92.2	87.9
Mark Twain	16	9 (56%)	7 (44%)	0	Y	90.0	95.0
Nicholas	13	7 (59%)	5 (33%)	1 (8%)	Y	92.4	93.1
Oak Ridge	30	23 (77%)	6 (20%)	1 (3%)	Y	92.1	96.3
Pacific	11	7 (63%)	3 (27%)	1 (10%)	Y	91.1	102.7
Parkway	19	10 (53%)	5 (26%)	4 (21%)	Y	90.3	120.6
Peter Burnett	31	20 (65%)	10 (32%)	1 (3%)	N	93.8	57.0
Tahoe	45	30 (67%)	9 (20%)	6 (13%)	Y	91.8	80.9
Theodore Judah	3	2 (66%)	1 (34%)	0	N	90.0	61.0
Thomas Jefferson	6	4 (66%)	1 (17%)	1 (17%)	N	91.9	74.0
William Land -	19	16 (82%)	2 (12%)	1 (6%)	Y	92.4	93.8
Woodbine	18	12 (66%)	6 (34%)	0	Y	90.3	86.1
Total	769	508 (65%)	209 (27%)	52 (8%)	18	*92.6	* 72.5
						** (88.8-96.2)	** (16.1-120.6)

**(88.8-96.2)

*(16.1-120.6)

- With N>10, LS>80, and LG<8% (More than 50% LEP at S. Anthony, 18% LEP in district in 1989-90).

++ With N>10, LS<50% and LG>8%

* District mean excluding John Still, Newcomer, and Sutter schools.

** District range excluding John Still, Newcomer, and Sutter schools.

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TABLE 9

1986-87 Eligibility for SCE/CH1 - Reading

1986-87 Scores	1988-89 thru 1990-91						
	<40%ile			>=40%ile			Total
	LS			LG			
	N=1,314	Row	Col	N=126	Row	Col	
<40%ile	1113	95%	85%	61	5%	48%	1174
>=40%ile	201	76%	15%	65	24%	52%	266

- * **Black students made up the largest part (41%) of the long-term SCE/Ch 1 students (LS).** The other ethnic groups in order of size were Hispanic (28%), White (22%), and Asian (7%).

The LS mean NCE scores were White (31), Asian (29), Black and Hispanic (28 each).

- * **Asian students made up the largest part (33%) of the long-term SCE/Ch 1 graduates (LG)** followed by White (29%), Hispanic (18%), and Black (16%).

The LG mean scores were White (58), Hispanic (56), Asian (55), Black (54).

- * **The Black students had the largest part (23%) of their own ethnic group** in the LS followed by Hispanic (22%), White (17%), and Asian (14%).

The Asian students had the largest part (12%) of their ethnic group in the LG followed by White (4%), Hispanic (3%), and Black (2%).

- * **Asian and White ethnic groups had a decreased LS and increased LG, and the Black and Hispanic ethnic groups had an increased LS and decreased LG.** The changes of percent, by ethnicity of SCE/Ch1 students, between the base year and the last year of the study for LS and LG, respectively, were Asian (-4% and +22%), Black (+6% and -19%), White (-4% and +3%), and Hispanic (+12% and -8%). (See TABLE 5, page 13.)

(2) Gender (See TABLE 11, page 18.)

- * Females made up 49% of the base year sample and males 51%. Their respective mean NCE scores were 30 and 31.
- * **Females made up 50% of the long-term SCE/Ch 1 students LS and 60% of the long-term SCE/Ch 1 graduate (LG).** Males made up 50% of the LS and 40% of the LG. Their respective LS and LG mean NCE scores were 29 and 55 for the females and 28 and 57 for the males.
- * Of their own gender, females were 20% LS and 5% LG; males were 20% LS and 3% LG.

(3) Grade (See TABLE 12, page 20.)

For the purposes of identification, four groups were assigned for individual grade:

- Group A = Grades 2 (1987-88) through 5 (1990-91)
- Group B = Grades 3 (1987-88) through 6 (1990-91)
- Group C = Grades 4 (1987-88) through 7 (1990-91)
- Group D = Grades 5 (1987-88) through 8 (1990-91)

TABLE 10

Math Concepts/Applications Mean NCE Scores by Ethnicity

Ethnicity	1987-88			1988-89 thru 1990-91					
	<40%ile			<40%ile			>=40%ile		
				LS			LG		
	N=4,169		Mean NCE	N=841		Mean NCE	N=166		Mean NCE
	N	%		N	%		N	%	
Am. Indian	68	2%	30	13	2%	32	2	1%	48
Asian	451	11%	30	62	7%	29	55	33%	55
Black	1473	35%	29	346	41%	28	26	16%	54
Hispanic	1083	26%	30	238	28%	28	30	18%	56
White	1080	26%	33	182	22%	31	48	29%	58
No Ethnicity Code	14	0%		-	-		5	3%	
Total		100%			100%			100%	

Percentage of SCE/Ch1 Population by Ethnicity

Ethnicity	1988-89 thru 1990-91			Total With 4-Yr-Scores*
	<40%ile		>=40%ile	
	LS	Other	LG	
Am. Indian	19%	78%	3%	100%
Asian	14%	74%	12%	100%
Black	23%	75%	2%	100%
Hispanic	22%	75%	3%	100%
White	17%	79%	4%	100%
No Ethnicity Code	-	64%	36%	100%

* 1522 students with 4 year data

TABLE 11

Student Frequency Counts - Mean NCE Scores
in Math Concepts/Applications by Gender

Gender	1987-88			1988-89 thru 1990-91					
	<40%ile			<40%ile			>=40%ile		
				LS			LG		
	N=4,169		Mean NCE	N=841		Mean NCE	N=166		Mean NCE
	N	%		N	%		N	%	
Female	2054	49%	30	416	50%	29	99	60%	55
Male	2112	51%	31	425	51%	28	67	40%	57
No Sex Code	3			-			-		
Total		100%			100%			100%	

Percentage of SCE/Ch1 Population by Gender

Gender	1988-89 thru 1990-91			Total With 4-Yr-Scores
	<40%ile		>=40%ile	
	LS	Other	LG	
Female	20%	75%	5%	100%
Male	20%	77%	3%	100%

- * **Grade 3 and 4 (Groups B and C) made up the largest parts (26% each) of the base year sample** followed by D (25%) and A (23%). Grade 5 (Group D) had the highest mean NCE score (32) followed by B (31), C (30), and A(29).
- * **Grade 3 of the base year (Group B) made up the largest part (29%) of the LS** followed by A (26%), C (24%), and D (21%). Group C had the highest mean NCE score (30) followed by A and D (29 each) and B (27).
- * **Grade 3 of the base year (Group B) made up the largest part (34%) of the LG** followed by A and C (24% each) and D (18%). Group A had the highest mean NCE score (58) followed by C (56), D (55), and B (54).
- * **Of their own grade, grades 2 and 3 of the base year (A and B) had 23% each LS** followed by C (19%) and D (17%). **Group B had 5% of its own group LG** followed by A and C (4% each) and D (3%).
- * **Group A had the greatest four year gain (8 points) in mean NCE score** (29 to 37) followed by C (7; 30 to 37), B (5; 31 to 36), and D (4; 32 to 36). (See **TABLE 2** page 8).
- * The largest mean NCE score growth (3-5 points) occurred between the base and second years. (See **TABLE 2** on page 8).
- * **The only decline in mean NCE scores that occurred between grades took place between grades 5 and 6 (37-36) and between grades 7 and 8 (37-36).** The mean gain NCE scores in general for between grades were above zero NCE gain points. (See **TABLE 2** on page 8.)

(4) Language Proficiency (See **TABLE 13**, page 20.)

Due to the incomplete proficiency code for some students, no analysis of these data was made in this study. The statistics shown in **TABLE 13** were used only for demonstration purposes.

TABLE 12

Math Concepts/Applications Mean NCE Scores by Grade

		1987-88				1988-89 thru 1990-91					
		<40%ile				<40%ile		LS		>=40%ile	
										LG	
1987-88	1990-91										
Grade	Grade	N=4,169		Mean NCE		N=841		Mean NCE		N=166	
		N	%			N	%			N	%
Group A	Gr 2	941	23%	29		219	26%	29		39	24%
Group B	Gr 3	1089	26%	31		246	29%	27		57	34%
Group C	Gr 4	1101	26%	30		204	24%	30		40	24%
Group D	Gr 5	1038	25%	32		172	21%	29		30	18%
Total			100%				100%				100%

Percentage of SCE/Ch1 Within Grade

1988-89 thru 1990-91			
<40%ile	Other	>=40%ile	Total With 4-Yr-Scores*
23%	73%	4%	100%
23%	72%	5%	100%
19%	77%	4%	100%
17%	80%	3%	100%

* 1522 with 4-year scores

TABLE 13

Math Concepts/Applications Mean NCE Scores by Language Proficiency

		1987-88				1988-89 thru 1990-91					
		<40%ile				<40%ile		LS		>=40%ile	
										LG	
Language Proficiency		N=4,169		Mean NCE		N=841		Mean NCE		N=166	
		N	%			N	%			N	%
FEPIEO*		3622	87%	31		748	89%	29		127	77%
LEP**		481	12%	28		86	10%	26		35	21%
No Lang. Code		66	2%			7	1%			4	2%
Total			100%				100%				100%

Chi-Square = 15.17

Significance level = .00

*Language code = 1, 7, or 8

**Language code = 2 or 3

Percentage of SCE/Ch1 by Language Proficiency

1988-89 thru 1990-91				
Language Proficiency	<40%ile	Other	>=40%ile	Total With 4-Yr-Scores
	N=841		N=166	
FEPIEO*	21%	75%	4%	100%
LEP**	18%	75%	7%	100%
No Lang. Code	11%	83%	6%	100%

*Language code = 1, 7, or 8

**Language code = 2 or 3

(5) Schools (See TABLE 14 on page 22.)

The findings reported in this sub-category were limited to students in Group A (Grades 2-5) and Group B (Grades 3-6) who were in the same school the entire four years of the study. The analysis was limited either to the entire sample or to the schools with more than 10 students in the sample.

There seemed to be some correlation between the computer labs and students exiting or staying in SCE/Ch 1 programs.

- * Eighteen of the schools had computer laboratories operating since 1988-89.
- * Four of the seven schools (C. Greenwood, C.B. Wire, David Lubin, Earl Warren, J. Smith, J. Bidwell, and M. Twain) that had the most success (defined as <50% LS and >20% LG) with exiting SCE/Ch1 students had computer laboratories. The two schools (B. Green, and E. Kemble) with little success with (>80% LS and <13% LG) exiting SCE/Ch1 students did not have a computer laboratory in 1988-89.
- * Four of the seven most successful schools in exiting students from SCE/Ch1 mathematics programs had lower attendance and lower transiency rates than the SCUSD respective rates.
- * The two schools with the least success in exiting students from SCE/Ch1 mathematics programs had lower attendance and higher transiency rates than the SCUSD respective rates.
- * There were a few very successful schools with most of the SCE/Ch 1 students exiting from the program sometime during the four years. Due to the small number of students included, no analysis was made for these schools. For example, at Hollywood Park, half of the 8 students became long-term SCE/Ch 1 graduates and only 2 were LS. Hollywood Park had high attendance and low transiency.

(6) Previous Achievement (1986-87 SCE/Ch 1 Eligibility) (See TABLE 15, page 22.)

- * 740 (88%) of the 841 long-term SCE/Ch 1 students (LS) were enrolled in the SCUSD in 1986-87, and 136 (82%) of the 166 long-term SCE/Ch 1 graduates (LG) were enrolled in the SCUSD in 1986-87.
- * The frequency distribution listed in TABLE 15 indicated that there was a correlation between students' previous achievement and their chances for success in the SCE/Ch 1 programs. Of the students who were eligible for SCE/Ch 1 during the 1986-87 school year, 93% were long-term SCE/Ch 1. Only 7% were long-term SCE/Chapter 1 graduates. Of those who were not eligible for SCE/Chapter 1, 73% were long-term SCE/Ch 1 and 27% were long-term SCE/Ch 1 graduates.

TABLE 14

Long-term Follow-up of Math Chapter 1 Students by School
1987-88 Grades 2 & 3

School	N	1988-89 thru 1990-91			Computer Lab	Attendance Rate	Transiency Rate
	1987-88 <40%ile	<40%ile	In & Out	>=40%ile			
Bowling Green -	27	22 (81%)	5 (19%)	0	N	90.0	85.7
Bret Harte	9	7 (78%)	2 (22%)	0	N	91.5	108.5
Caleb Greenwood ++	18	7 (39%)	7 (39%)	4 (22%)	N	93.4	49.7
Clayton B. Wire ++	21	6 (28%)	9 (43%)	6 (29%)	Y	91.4	84.6
David Lubin ++	11	5 (45%)	3 (27%)	3 (27%)	N	91.1	64.2
Earl Warren ++	30	14 (47%)	9 (30%)	7 (23%)	Y	91.0	109.9
Edward Kemble -	32	27 (84%)	4 (13%)	1 (3%)	N	90.4	104.2
Susan B. Anthony	4	0	4 (100%)	0	Y	94.3	62.6
Elder Creek	10	4 (40%)	3 (30%)	3 (30%)	N	95.2	81.0
Ethel Baker	13	7 (54%)	5 (38%)	1 (8%)	Y	89.9	110.6
Ethel Phillips	25	16 (64%)	7 (28%)	2 (8%)	Y	88.8	83.1
Freeport	17	10 (59%)	4 (23%)	3 (18%)	Y	91.6	98.9
Fruit Ridge	22	15 (68%)	6 (27%)	1 (5%)	Y	92.4	89.4
H. W. Harkness	24	16 (67%)	7 (29%)	1 (4%)	N	91.5	82.0
Hollywood Park	8	2 (25%)	2 (25%)	4 (50%)	N	93.2	53.6
Jedediah Smith ++	19	3 (17%)	12 (63%)	4 (21%)	Y	94.2	59.6
John Bidwell ++	11	2 (18%)	6 (55%)	3 (27%)	N	93.0	41.1
John D. Sloat	5	3 (60%)	2 (40%)	0	N	94.4	48.1
Joseph Bonnheim	19	13 (68%)	4 (21%)	2 (11%)	Y	90.2	50.9
Maple	10	5 (50%)	2 (20%)	3 (30%)	Y	92.4	113.2
Mark Hopkins	14	10 (71%)	4 (29%)	0	N	92.2	87.9
Mark Twain ++	19	6 (31%)	9 (48%)	4 (21%)	Y	90.0	95.0
Nicholas	12	7 (58%)	3 (25%)	2 (17%)	Y	92.4	93.1
Oak Ridge	29	11 (48%)	15 (52%)	3 (10%)	Y	92.1	96.3
Pacific	10	6 (60%)	4 (40%)	0	Y	91.1	102.7
Parkway	15	3 (20%)	10 (67%)	2 (13%)	Y	90.3	120.6
Peter Burnett	14	4 (29%)	8 (57%)	2 (14%)	N	93.8	57.0
Tahoe	33	18 (55%)	12 (36%)	3 (9%)	Y	91.8	80.9
Theodore Judah	3	2 (67%)	1 (33%)	0	N	90.0	61.0
Thomas Jefferson	4	1 (25%)	3 (75%)	0	N	91.9	74.0
William Land	7	6 (86%)	1 (14%)	0	Y	92.4	93.8
Woodbine	12	9 (75%)	2 (17%)	1 (8%)	Y	90.3	86.1
Total	507	267 (52%)	175 (35%)	65 (13%)	18	*92.6	*72.5

**(88.8-96.2)

**(16.1-120.6)

- With N>10, LS>80% and LG<8%, (More than 50% LEP at S. Anthony, 18% LEP in district in 1989-90)

++ With N>10, LS<50 and LG>8%

*District mean excluding John Still, Newcomer, and Sutter schools

**District range excluding John Still, Newcomer, and Sutter schools

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TABLE 15

1986-87 Eligibility for SCE/Ch1 - Math

1986-87 Scores	1988-89 thru 1990-91						
	<40%ile			>=40%ile			Total
	LS			LG			
	N=740*	Row	Col.	N=136*	Row	Col.	
<40%ile	584	93%	79%	44	7%	32%	628
>=40%ile	156	73%	21%	92	27%	68%	248

*There were 841 LS. Of the 841, 740 had scores in 1986-87.

There were 166 LG. Of these, 136 had scores in 1986-87.

CONCLUSIONS

Research Question 1: To what degree have thinking skills of SCE/Ch 1 students been improved/sustained over the four school years, 1987-88 through 1990-91?

1. A majority of SCE/Ch 1 students have stayed in the program for the four years in 1987-88 through 1990-91, and about 10% have consistently exited from the program.

At any given time, 5 to 10 times as many SCE/Ch1 students were long-term SCE/Ch 1 students (LS) as long-term SCE/Ch 1 graduates (LG) in reading or mathematics. Also, at any given time, about 80% of SCE/Ch1 students were in need of reading services and about 70% were in need of mathematics services.

2. The mean CTBS test scores of each year' total SCE/Ch 1 students in this study increased gradually in both reading and math.

Long-term SCE/Ch 1 graduates and marginal SCE/Ch 1 students tended to improve their mean NCE scores over time in reading and mathematics while long-term SCE/Ch 1 students' mean NCE scores remained relatively flat or normal. The long-term SCE/Ch 1 graduates scores exceeded the 50%ile for all three years after the base year. The trend seemed to be that the mean NCE scores continued to move up from the 50%ile. The SCE/Ch1 program services and the "regular" instruction that long-term SCE/Ch 1 graduates and marginal students received had to be effective since these students had year-to-year mean NCE score increases in reading and mathematics.

Normal progress was made by long-term SCE/Ch 1 students in reading and mathematics but at a level lower than average.

The first year of the study all the long-term SCE/Ch 1 graduates exited and each subsequent year "new" marginal SCE/Ch1 students exited. Therefore, the least capable, least receptive, and/or the most seriously deficient stayed in the long-term SCE/Ch 1 student group, which would make a decline in the mean NCE scores of this group each year understandable. Consequently, the SCE/Ch1 services had to be effective just to have the long-term SCE/Ch 1 students' mean NCE scores stay flat.

3. The mathematics services seemed to be more effective in assisting students' long-term progress than the reading services.
 - a. More students were eligible for SCE/Ch 1 services in reading than in math. In 1988-89, the number was 5115 for reading and 4169 for math in grades 2-5.
 - b. There was a higher percent of students exiting from the SCE/Ch 1 program in math than reading in the long-term (reading - 7% , math - 11%). There was also a lower portion of students staying in the math SCE/Ch 1 program (55%) than in the reading program (70%) among the long-term students.

- c. In general, SCE/Ch 1 students made more gain in test scores in math (4-8 NCE points) than in reading (3-7 points).
- d. There were more schools with the majority of their SCE/Ch 1 students exiting from the program at least once in math than in reading.

Research Question 2: What kind of students have exited from and stayed out of the programs (Long-term SCE/Ch 1 graduates), and what kind of students have never performed well enough to exit the programs (Long-term SCE/Ch 1 students)?

1. Ethnicity

White students were the most successful and Hispanic students the least, in exiting SCE/Ch1 reading programs.

Asian students were the most successful and Black students the least, in exiting SCE/Ch1 mathematics programs.

The relatively high success rate in mathematics by SCE/Ch1 Asian students and relatively low success rate of SCE/Ch1 Black students were consistent with the findings/conclusions of the **Research and Evaluation Report No. 8, GATE STUDENTS' ACHIEVEMENT (January 31, 1992).**

The Hispanic is the only ethnic group over the four years of the study that has a percentage increase of long-term SCE/Ch 1 students and a percentage decrease of long-term SCE/Ch 1 graduates in both reading and mathematics.

2. Gender

The SCE/CH1 reading and mathematics programs were basically genderless. In long-term SCE/Ch 1 graduates (LG) in mathematics, females made up 60% of the LG and 5% of their own gender group as opposed to 40% and 3% for the males. However, the long-term SCE/Ch 1 male graduates' mean NCE score was 2 points higher than the females'. Slightly more than half of the long-term SCE/Ch 1 students were males in both math and reading.

3. Grade

- a. **The earlier SCE/Ch1 students were identified and received SCE/Ch 1 program services the better the long term results in positive change in mean NCE scores.** For example, in the four year follow-up study, grade 2 students had the greatest gain scores on CTBS than the other grades.

In addition, the **largest gains in reading and mathematics mean NCE scores were made between the first and second year of SCE/Ch1 programs - regardless of grade.** The mean NCE scores of all grades flattened out between the last two years and one actually declined.

- b. Criteria related to long-term SCE/Ch 1 student graduates (exiting SCE/Ch1 students and keeping them out) indicated that the third grade was the best place to start.
- c. In general, SCE/Ch 1 students made more gain in test scores in math (4-8 NCE points) than in reading (3-7 points).
- d. There were more schools with the majority of their SCE/Ch 1 students exiting from the program at least once a in math than in reading.

4. Language Proficiency

No analysis or conclusions were drawn from the English language proficiency data because of the unreliable language proficiency coding on the test files.

5. School Factors

a. Computer Labs

There seemed to be an indication that the availability of SCE/Ch1 computer laboratories may have helped SCE/Ch1 students exit from mathematics programs. The evidence, however, was far from definitive - especially in reading. Due to the lack of standardization in the use of computer labs and the short period of the computer lab program, the effects of computers upon SCE/Ch 1 students' long-term achievement is not conclusive at this time.

b. Attendance and Transience

Although it was not clear to what extent the attendance and transiency rates impacted upon the schools' ability to exit SCE/Ch 1 students from the SCE/Ch 1 programs, it appeared that low attendance and high transiency rates were indigenous to SCE/Ch1 schools.

The lowest attendance rate and the highest transiency rate in the SCUSD were at SCE/Ch1 schools.

Twenty-four of the 32 SCE/Ch1 schools had lower attendance rates than the SCUSD average rate. Twenty-two of the 32 SCE/Ch1 schools had higher transiency rates than the SCUSD average rate.

6. Previous Achievement

There was a relationship between students' achievement prior to their entering in the SCE/Ch 1 and their chances for success in the program.

- a. Of the long-term SCE/Ch 1 students, about 80% or more were low achievers and eligible for SCE/Ch 1 services before the base year in the study.

- b. Of the long-term SCE/Ch 1 graduates, the majority achieved above the SCE/Ch 1 entering criteria prior to the period of this study in 1986-87.

7. Composite **profiles** were drawn for four SCE/Ch1 students.

- a. Long-term SCE/Ch 1 Students in Reading Program

An Asian or Hispanic male. He entered the program in the second grade (probably earlier). His fourth year NCE score was about 30, which was the same as his entering NCE score. He was probably a LEP. He attended a school that might or might not have had a computer laboratory. The school he attended had low attendance and high transiency rates, and he had more than a 50% chance of attending the same school for the four consecutive years of the study.

- b. Long-term SCE/Ch 1 Students in Mathematics Program

A Black, and probably, a male. He entered the program as an FEP in the third grade (probably earlier). His fourth year NCE score was 20, which was the same or slightly lower than his entering NCE score. He attended a school that probably did not have a computer laboratory and one that might have had low attendance and high transiency rates.

- c. Long-term SCE/Ch 1 Graduates in Reading Program

An Asian or White male. He entered the program in the third grade as a FEP. He probably wasn't eligible for the SCE/Ch 1 before. His fourth year NCE score was 57, which was about 25 points higher than his entering NCE score. Also, his NCE scores increased each year. He attended a school that may or may not have had, a computer laboratory. The school he attended might have had high attendance and low transiency rates.

- d. Long-term SCE/Ch 1 Graduates in Mathematics Program

An Asian female. She entered the program in the third grade. She probably was not eligible for the SCE/Ch 1 before. Her fourth year NCE score was 54, which was 26 points higher than her entering score. Also, her NCE scores increased each year. The school she attended might have had low transiency rates and might have a computer laboratory. She had more than a 50% chance (the highest by among groups) of attending the same school for the four consecutive years of the study.

RECOMMENDATIONS

1. Long-term Positive Impact of SCE/Ch1 Programs: Long-term Graduates improved their mean NCE scores and continuously scored above the 50%ile each year of the study; Marginal students each year of the four year study also exceeded their base year mean NCE scores and frequently exceeded the 50%ile; and Long-term students SCE/Ch 1, despite the fact that each year the most successful students exited from the SCE/Ch1 programs, maintained their mean NCE scores. The preceding statement is true of both reading and mathematics.

Recommendation: The SCUSD should identify and recognize those schools and personnel who were successful in exiting their students from and/or in significantly improving their students academic achievement in SCE/Ch1 programs.

2. The Hard Core Long-term SCE/Ch 1 Students: There is a high percentage, significantly beyond a normal curve, of hard core Long-term SCE/Ch 1 students in the SCE/Ch1 programs.

Recommendation: Develop a plan to identify the impediments to their progress and to provide resources and actions to ameliorate the impediments.

3. The Importance of the SCE/Ch 1 Marginal Students: Marginal students represent a significant percentage of the SCE/Ch1 students. These students move in and out of the SCE/Ch 1 programs based on their achievement.

Recommendation: Develop a plan to determine the causes of these achievement fluctuations and to address the factors influencing success and failure of marginal students and apply the plan to all SCE/Ch1 programs.

4. Successful Schools: Some schools appear to be more successful than others in having long-term exiting graduates from SCE/Ch1 reading and mathematics programs.

a. **Recommendation:** Identify differences in SCE/Ch1 program specifics between the successful and the not successful schools in terms of having long-term SCE/Ch 1 graduates, such as, but not limited to, computer use, instructional time, special support for LEP students, organization/site administrative involvement, stability of professional and classified (instructional) staff, instructional materials, types and amounts of SCE/Ch1 services.

b. **Recommendation:** The SCE/Ch 1 programs at those schools where a small number of long-term SCE/Ch 1 graduates and a large number of long-term SCE/Ch 1 students were identified, should be reviewed to identify the reasons for not being able to exit more students. Based on the reasons identified, a specific remedial plan should be developed for those students who have not shown progress each year.

5. **Black and Hispanic Students' Relatively Low Achievement:** There are recurring findings of long-term, relatively low achievement in mathematics by Black students, especially males. The Hispanic is the only ethnic group over the four years of the study that has a percentage increase of Long-term SCE/Ch 1 students and a percentage decrease of Long-term SCE/Ch 1 graduates in **both** reading and mathematics.
- a. **Recommendation:** Investigate the different approaches to programs which are effective in promoting Black and Hispanic students' achievement in the SCE/Ch 1 program in this and other districts.
- b. **Recommendation:** Develop and implement a plan of action to improve Black students', especially male, achievement in mathematics and Hispanic students' achievement in reading and mathematics at each of the SCE/Ch 1 schools where a large portion of students are in the long-term SCE/Ch 1 group. The plan will include a procedure to monitor individual student's progress and to promote the awareness of students' educational needs by parents, the resource teachers and the classroom teachers on a regular basis. The plan also will have remedial instructional services designed specifically for the minority low achieving students.
6. **Attendance and Transiency:** Attendance and transiency are not controlled by the schools. None-the-less they appear to be related to school achievement.

Recommendation: Develop a clearly defined SCE/Ch1 goal (with specifically articulated and funded procedures) to improve attendance. Evaluate the implementation and the procedures to meet the goal in order to ascertain their effectiveness.

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Non-Discrimination

"The Sacramento City Unified School District is committed in all of its activities, policies, programs, and procedures to provide equal opportunity for all to avoid discrimination against any person regardless of race, sex, religion, color, national origin, disability, marital status, or age."

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APPENDIX A

Number of Students Skipping/Repeating a Grade

Reading Comprehension

	1988-89	1989-90	1990-91
Skip Grade	26	49	41
Repeat Grade	141	120	113

Math Concepts/Applications

	1988-89	1989-90	1990-91
Skip Grade	18	28	25
Repeat Grade	120	99	100

121-100 08/11/92

APPENDIX B

Percentile to NCE Conversion Table

%	NCE	%	NCE	%	NCE
1	1.0	34	41.3	67	59.3
2	6.7	35	41.9	68	59.9
3	10.4	36	42.5	69	60.4
4	13.1	37	43.0	70	61.0
5	15.4	38	43.6	71	61.7
6	17.3	39	44.1	72	62.3
7	18.9	40	44.7	73	62.9
8	20.4	41	45.2	74	63.5
9	21.8	42	45.8	75	64.2
10	23.0	43	46.3	76	64.9
11	24.2	44	46.8	77	65.6
12	25.3	45	47.4	78	66.3
13	26.3	46	47.9	79	67.0
14	27.2	47	48.4	80	67.7
15	28.2	48	48.9	81	68.5
16	29.1	49	49.5	82	69.3
17	29.9	50	50.0	83	70.1
18	30.7	51	50.5	84	70.9
19	31.5	52	51.1	85	71.8
20	32.3	53	51.6	86	72.8
21	33.0	54	52.1	87	73.7
22	33.7	55	52.6	88	74.7
23	34.4	56	53.2	89	75.8
24	35.1	57	53.7	90	77.0
25	35.8	58	54.2	91	78.2
26	36.5	59	54.8	92	79.6
27	37.1	60	55.3	93	81.1
28	37.7	61	55.9	94	82.7
29	38.3	62	56.4	95	84.6
30	39.0	63	57.0	96	86.9
31	39.6	64	57.5	97	89.6
32	40.1	65	58.1	98	93.3
33	40.7	66	58.7	99	99.0